

I claim:

1. An octahedral puzzle arrangement comprised of a plurality of radially interlocking tetrahedral and octahedral components for permitting rotation of a plane of such components about an axis perpendicular to said plane of components, comprising:
 - an inner core octohedral member having eight faces;
 - an inner core of tetrahedral members each rotationally attached to one of said faces of said octahedral core member;
 - a second radially outwardly disposed layer consisting of octahedral components having portions extending radially inward of and under and captured by said inner core of tetrahedral members, said tetrahedral members each having two faces displayed on a surface of said octahedral puzzle; and
 - a third radially outwardly disposed layer consisting of tetrahedral and octahedral members, each of said members of said third layer having at least one face displayed on said surface of said octahedral puzzle, wherein said third layer of tetrahedral and octahedral members have a portion extending radially inwardly to be captured by a portion of said

components comprising said second layer without interfering with said core tetrahedral members.

2. The puzzle as recited in claim 1, wherein said inner core octahedral member has a means for attaching a core tetrahedral component on each of said faces thereon.
3. The puzzle arrangement as recited in claim 2, wherein said core tetrahedral members have a triangular cap for radial securement and rotational freedom of adjacent edge octahedral members.
4. The puzzle arrangement as recited in claim 3, wherein said edge octahedral members are radially secured and are permitted rotational freedom by said core tetrahedral members.
5. The puzzle arrangement as recited in claim 4, wherein said edge octahedral members each have an undercut portion spaced radially outwardly from said core tetrahedral members for radial securement of an adjacent surface tetrahedral and surface octahedral.

6. The puzzle arrangement as recited in claim 5, wherein said surface tetrahedral are radially secured to said puzzle arrangement by an arrangement of feet thereon extending radially inwardly of said edge octahedral.

7. The puzzle arrangement as recited in claim 6, wherein a vertex octahedral member is radially secured to said puzzle arrangement by an arrangement of feet thereon extending radially inwardly of said surface tetrahedral and said surface octahedral members.

8. The puzzle arrangement as recited in claim 1, wherein said inner core octahedral member is an eight armed spider member.

9. The puzzle arrangement as recited in claim 8, wherein said core tetrahedral members each consist of an extension to an arm of said eight armed spider member.

10. An octahedron puzzle arrangement comprised of a plurality of radially interlocking components, for permitting rotation of a plane of such components about an axis perpendicular to said plane of components to define a changeable collective face of said puzzle arrangement, comprising:

an inner core octahedral member;

a first radially innermost transitional layer of said components; and

a second layer of said components, each having at least one outer face of triangular shape, wherein a planar portion of said second layer of components may be rotated about an axis perpendicular to said planar portion of components with respect to said innermost layer of components, to effect said change in said collective face of said octahedron puzzle arrangement; wherein said second layer of said components are arranged in an overlapping array with respect to said innermost transitional layer of said components.

11. The octahedron puzzle as recited in claim 10, wherein a plane of said second layer of components are rotatable with respect to an adjacent plane of components in said second layer.

12. The octahedron puzzle as recited in claim 11, wherein said puzzle has an innermost core octahedral member having eight triangular faces thereon, each of said faces having an axis bearing bore therein.

13. The octahedron puzzle as recited in claim 12, wherein each of said faces of said innermost core octahedral member has a flattened tetrahedral member rotatably secured thereon, each said flattened tetrahedral member having an curvilinear edge for slidable retention of a further component thereunder.

14. The octahedral puzzle as recited in claim 13, wherein said puzzle includes an octahedral outer edge member with a curvilinear foot portion for engagement with said curvilinear edge of said flattened tetrahedral member.

15. The octahedral puzzle as recited in claim 14, wherein said puzzle includes a tetrahedral member having a curvilinear foot for placement adjacent a further outer component of said puzzle.

16. The octahedral puzzle as recited in claim 15, wherein said puzzle includes an octahedral vertex member having a curvilinear foot for placement at a corner of said collective faces of said puzzle arrangement.

17. The octahedral puzzle as recited in claim 16, wherein said flattened tetrahedral member comprises said first transitional layer rotatable about said inner core octahedral member.

18. The octahedral puzzle as recited in claim 17, wherein octahedral outer edge member, said tetrahedral outer member and said octahedral vertex member comprise said second layer of components.